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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|------------------|
| 10/530,270 | 08/01/2005 | George Boyadjieff | DQ 001 PCT/US | 3062 |
| 7590 05/02/2007 | | | | |
| Guy McClung # 114 5315-B F.M. 1960 Rd. West Houston, TX 77069-4410 | | | EXAMINER EDWARDS JR, TIMOTHY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2612 | |
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| | | | 05/02/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|---|--|--|
| Office Action Summary | Application No. 10/530,270 | Applicant(s) BOYADJIEFF ET AL. | |
| | Examiner Timothy Edwards, Jr. | Art Unit 2612 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 16 recites the limitation " said amplifier-repeater " in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4,9-14,19,20 are rejected under 35 U.S.C. 102(b) as being anticipated by Mohn '636.

Considering (new) claim 1, Mohn discloses an apparatus for transmitting a signal from deep in a wellbore through a string of tubular (see col 1, line 62 to col 2, line 4); b) a signal conductor is located adjacent an interior surface of the tubular (see col 3, lines 1-7).

Considering claim 2, Mohn discloses the limitation of this claim (see col 2, lines 12-19).

Art Unit: 2612

Considering claim 3, Mohn discloses the limitation of this claim (see col 5, lines 9-12).

Considering claim 4, Mohn discloses the limitation of this claim (see figs 3A thru 3C).

Considering claim 9, Mohn discloses the limitation of this claim (see fig 3C).

Considering claim 10, Mohn discloses the limitation of this claim (see col 4, lines 17-21 and lines 54-58).

Considering claim 11, Mohn discloses the limitation of this claim (see col 5, lines 22-24).

Considering claim 12, Mohn discloses the limitation of this claim (see col 5, lines 55-61).

Considering claim 13, Mohn discloses the limitation of this claim (see col 6, lines 31-37).

Considering claim 14, Mohn discloses the limitation of this claim (see col 6, lines 31-37 and lines 53-58).

Considering claim 19, Mohn discloses the limitation of this claim (see col 1, lines 62-67).

Considering claim 20, Mohn discloses the limitations of this claim (see col 1, lines 62-67, col 4, lines 45-53 and col 5, lines 9-12 and lines 55-62).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-8, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohn '636.

Considering claims 5-8, Mohn does not specifically recite the type of conductor used in his system. However, one of ordinary skill in the art recognizes conductors are made of wire, foil and micro strip line. Mohn discloses a conductor embedded in an insulated coat and used to transmit data. One of ordinary skill in the art readily recognizes wire, foil and micro strip line are all conductors capable of transmitting data. Therefore, it would have been obvious to one of ordinary skill in the art the Mohn system would function the same using any of these conductor means. Mohn system functionally addresses the limitation of this claim (see figs 3A-3C).

Considering claim 18, Mohn does not specifically recite the signal conductor is arranged in a recess in the interior wall of the tubular. Examiner takes official notice this type arrangement for signal conductor within a drill sting is known in the art.

Art Unit: 2612

7. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohn '636 as applied to claim 1 above, and further in view of van der Graaf '381.

Considering claim 15, Mohn does not specifically recite an amplifier-receiver within his system of communication. One of ordinary skill in the art readily recognizes the transmitted signal from a significant depth within a wellbore might be attenuated in several ways (i.e. length of conductor, leakage into well fluid, space at the joining points of a drill string or the drill string). Van der Graaf teaches the use of an amplifier-receiver in a wellbore system comprising electrodes which extend the length of a pipe section and used to carry data from the depths of a well to the surface of the well (see col 3, lines 50-58 and col 4, lines 49-58). Therefore, it would have been obvious to one of ordinary skill in the art to modify the transmission system of Mohn to include an amplifier-receiver as taught by van der Graaf because both systems are concerned with transmitting data from great depth in a well system by conductor within the drill string.

Considering claim 16, Mohn does not specifically recite an amplifier-repeater comprising a signal amplifier and a power supply within his system of communication. Van der Graaf discloses the use of signal amplifier and a power supply (see col 5, lines 15-25 and col 7, lines 45-60) in a system analogous to the Mohn system. Obviousness of this limitation is as stated in claim 15.

Art Unit: 2612

Considering claim 17, Mohn does not specifically recite the power supply of the amplifier-receiver is a piezoelectric device. Van der Graaf discloses the use of a power supply within the amplifying device in his system of communication. One of ordinary skill in the art readily recognizes the use of a power supply in an amplifying device as taught by van der Graaf. Any type of power supply would function the same.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Monico, Jr. '234 discloses the use of contact strips as conductors embedded in the length of a drill pipe. Dawson et al teaches the use of a wire within a drill pipe used to convey signals and an antenna.

Any inquiry concerning this communication should be directed to Examiner Timothy Edwards, Jr. at telephone number (571) 272-3067. The examiner can normally be reached on Monday-Thursday, 8:00 a.m.-6:00 p.m. The examiner cannot be reached on Fridays.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Brian Zimmerman, can be reached at (571) 272-3059.

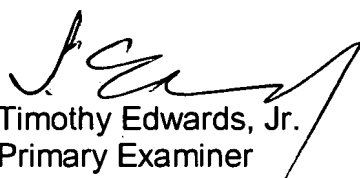
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-4700, Mon-Fri., 8:30 a.m.-5:00 p.m.

Any response to this action should be fax to:

(571) 273-8300 (for formal communications intended for entry).

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> or contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'J. Edwards, Jr.', with a long, sweeping horizontal stroke extending to the right.

Timothy Edwards, Jr.
Primary Examiner
April 28, 2007